

**To:** Griswold, Hays[Griswold.Hays@epa.gov]  
**From:** Paul Davis  
**Sent:** Mon 8/10/2015 1:59:40 AM  
**Subject:** Re: ANOTHER analysis of the amount of water released into the Animas

Hi Hays,

I just listened on line to the public meeting in Durango and heard the EPA spokesman (Shawn McGrath) say the new estimate is 3 million gallons based on the USGS gaging station at Cement Creek.

Only one small issue — he gave the USGS credit for realizing this station has caught the plume and gave the USGS credit for doing the analysis.

Not that I care much, but I do care a little about getting credit for the analysis.

thanks and I hope all is well

Paul Davis

On Aug 7, 2015, at 11:13 PM, Griswold, Hays <[Griswold.Hays@epa.gov](mailto:Griswold.Hays@epa.gov)> wrote:

Thank you very much for the timely information we will check other sources our estimate was based on the estimated volume of the adit evacuated by the water.

Thanks again

Hays

Sent from my iPad

On Aug 7, 2015, at 3:28 PM, Paul Davis <[p\\_davis@envirologicinc.com](mailto:p_davis@envirologicinc.com)> wrote:

Dear Mr. Griswold,

I just performed a similar analysis for the USGS gaging station on Cement Creek.

I get just over 3 million gallons.

Now it is possible I have a systematic error so these estimates need to be independently reviewed

hope this helps,

IF you want or need to talk to me I will be traveling to Farmington, New Mexico this afternoon but you can call me at 505-688-6053

Sincerely,

Paul Davis

Begin forwarded message:

**From:** Paul Davis <[p\\_davis@envirologicinc.com](mailto:p_davis@envirologicinc.com)>  
**Subject:** analysis of the amount of water released into the Animas  
**Date:** August 7, 2015 at 12:34:21 PM MDT  
**To:** [griswold.hays@epa.gov](mailto:griswold.hays@epa.gov)

Dear Mr. Griswold,  
We spoke briefly in the Durango Coffee Shop this morning. I am a hydrologist (mainly groundwater) and, using the USGS gaging station at Silverton, estimated the quantity of Wednesday's release.

Here is the hydrograph from the days before, during and after the spill.  
(<http://waterdata.usgs.gov/nwis/uv?09359020>)

<PastedGraphic-1.tiff>

The spill clearly shows up on August 5th.

I took the period of record from late on the 4th to the evening of the 5th and estimated the trend of the base flow (flow that would have occurred without the spill. I then subtracted that estimated base flow from the flow during the spill. Next integrated (added up) the flow under the remaining curve (which is just a curve of the spill minus base flow.

I get about 420,000 cubic feet (the number I mistakenly told you this morning as gallons) or about 3,160,000 gallons. See the attached spreadsheet.

A WORD OF CAUTION — this analysis was done in a hurry and must be checked by someone else.

Also - a cross check of the analysis could be performed by analyzing USGS gaging station records from their station on the Animas at Durango.

I have time later today if you want to meet and discuss this analysis.

I do hope it is useful to you.

Sincerely,

**Paul Davis**  
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<Analysis of spill into the Animas\_5August2014.xlsx>

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